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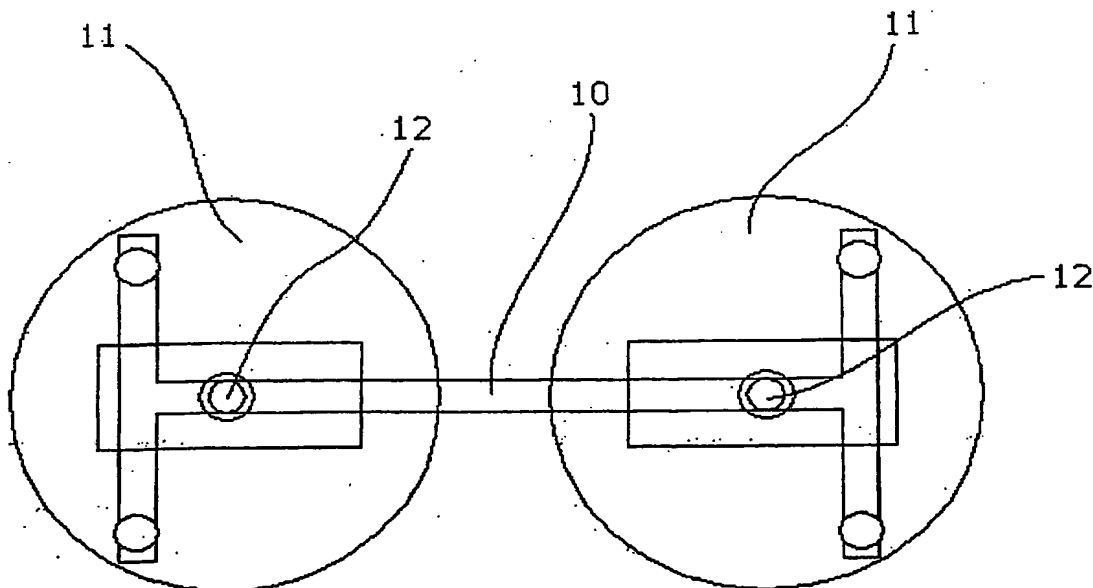
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(54) Title: DYNAMIC FOOTSTOOL DEVICE



(57) Abstract: A footstool is described which allows to exercise feet, legs and ankles even while being in a seated position.

DYNAMIC FOOTSTOOL DEVICE

Technical field

The following invention relates to the field of physical wellness products, in particular for the exercising of the lower extremities and joints (feet, legs, ankles
5 and knees).

Background art

It is known that remaining seated for long period of time, as required, for example, by office work, often causes problems to the lower extremities that present with a tingling sensation and in subjects that are prone, with aches and pains in the leg
10 and calf, ankle swelling and other similar disorders.

In order to prevent such bothersome inconveniences, or to combat their effects, the only solution is to interrupt the seated activity and exercise a little in order to recover the normal activity of the interested limbs.

The advantage that can be obtained from a simple device that makes it possible to
15 perform these activities from a seated position thus avoiding the abovementioned inconveniences without interrupting activity is, however, evident.

Summary of the invention

This invention relates to a device, hereinafter referred to as "dynamic footstool" that makes it possible to keep the lower extremities and joints in movement, by
20 means of mobile footrests fitted around a support.

Description of the drawings

Fig. 1 illustrates a plan view of a device according to the invention;

Fig. 2 illustrates a prospective view of a device according to the invention;

Fig. 3 shows a particular embodiment of the present invention.

Detailed description of the invention

As can be seen in Fig. 1, the dynamic footstool according to the invention consists of a base 10 where two footrests 11 are integrally joined thereto by means of joints 12.

- 5 The base 10 is a structure having any shape that allows it to rest firmly on the ground, such as an "H" shape.

If preferred, said base may be fitted with adjustable feet on the surface in contact with the ground that make it possible to raise or lower the base as necessary or alternatively with non-slip rubber pads.

- 10 The joints 12 are such as to ensure free rotation of the footrests 11 on a plane parallel to the plane containing the base 10 and, simultaneously, their inclination in relation to said plane, in all spatial directions. Said joints should preferably be ball-and-socket joints, but they may be replaced by other equivalent mechanical solutions (springs, articulated joints etc.). Said joints must however have a suitable
15 size to ensure that the footrests 11 may tilt in the various directions without touching the base 10 or the ground and preferably they will be attached to the barycentre of the footrests 11.

- The footrests 11 must be such as to allow for a comfortable resting of feet with shoes and can have a range of shapes in order to allow, for example, comfortable
20 resting of high-heeled shoes (such as those in the case of women's footwear); moreover, on their upper surface a layer of a non-slip material may be provided.

According to a particular embodiment of this invention, said footrests are circular in shape.

According to a further particular embodiment of the invention, the footrests 11 consist of a solid body suitable for resting feet, which is hollow inside and in the cavity thereof a mobile mass that accentuates and accompanies the movement of the footrests themselves is provided.

5 If preferred, in this case the footrest 11 may have a bowl-shape, as shown in Fig. 3.

Said mobile mass may be, for example a liquid (such as water, viscous liquid, oil, etc.) or it may consist of a collection of small particles (small metal or marble spheres, etc., sand, plaster, etc.) or an admixture of both the abovementioned
10 solutions.

Very viscous oils are particularly preferred for composing the abovementioned mobile mass.

If preferred, the device according to the invention can present a single footrest 11, hinged to the base 10 by a joint 12 analogously to what described above, having
15 such dimensions as to consent the resting of one or both feet.

The device according to the invention can be manufactured using any material suitable to the purpose, the materials which allow to limit the weight of the devices without compromising its solidity (such as plastic, aluminium, etc.) will be obviously preferred.

20 The use of the device according to the invention is intuitive.

The user rests his/her feet on the rests 11 whilst continuing the activity performed in a seated position.

Even without paying voluntary attention, due to the simple composed effect of the intrinsic instability of the rests on the joints and small movements, which are also

performed whilst seated, the feet will be caused to move in the various directions allowed by the joints 12 and therefore the joints and the legs will be always gently moved, thus not only preventing the aforementioned bothersome disorders, but also stimulating circulation in the lower limbs and therefore substantially
5 contributing to their tone and, consequently, to the user's overall well-being.

CLAIMS

1. A footstool device comprising footrests movable around a support.

2. The device according to claim 1 composed of a base (10) to which two footrests (11) are firmly attached by means of joints (12).

5 3. The device according to claim 2 wherein the base (10) presents, on the part that must rest on the ground, either adjustable feet that allow it to be raised or lowered as required, or non-slip rubber pads.

4. The device according to claims 1 – 3 wherein said joints (12) are capable to allow for a free rotation of the footrests (11) on a plane parallel to the plane
10 containing the base (10) and their inclination, always in relation to said plane, in all spatial directions.

5. The device according to claim 4 wherein the joints (12) are ball-and-socket joints.

6. The device according to claims 4 and 5 wherein the joints are sized in such a
15 way as to allow the footrests (11) to tilt in the various directions without touching the ground or the base (10).

7. The device according to claims 4 – 6 wherein the joints 12 are attached to the barycentre of the footrests (11).

8. The device according to claims 1 – 7 wherein the footrests (11) are variously
20 shaped.

9. The device according to claim 8 wherein the footrests (11) have a circular shape.

10. The device according to claims 8 and 9 wherein the footrests (11) are composed of a solid body with an internal hollow and containing a mobile mass inside said cavity.

11. The device according to claim 10 wherein said mobile mass is a liquid.

5 12. The device according to claims 8 – 11 wherein the upper surface of the footrests (11) presents a layer of non-slip material.

13. The device according to claims 1 – 12 wherein a single footrest (11) is present with dimensions suitable for resting one or both feet.

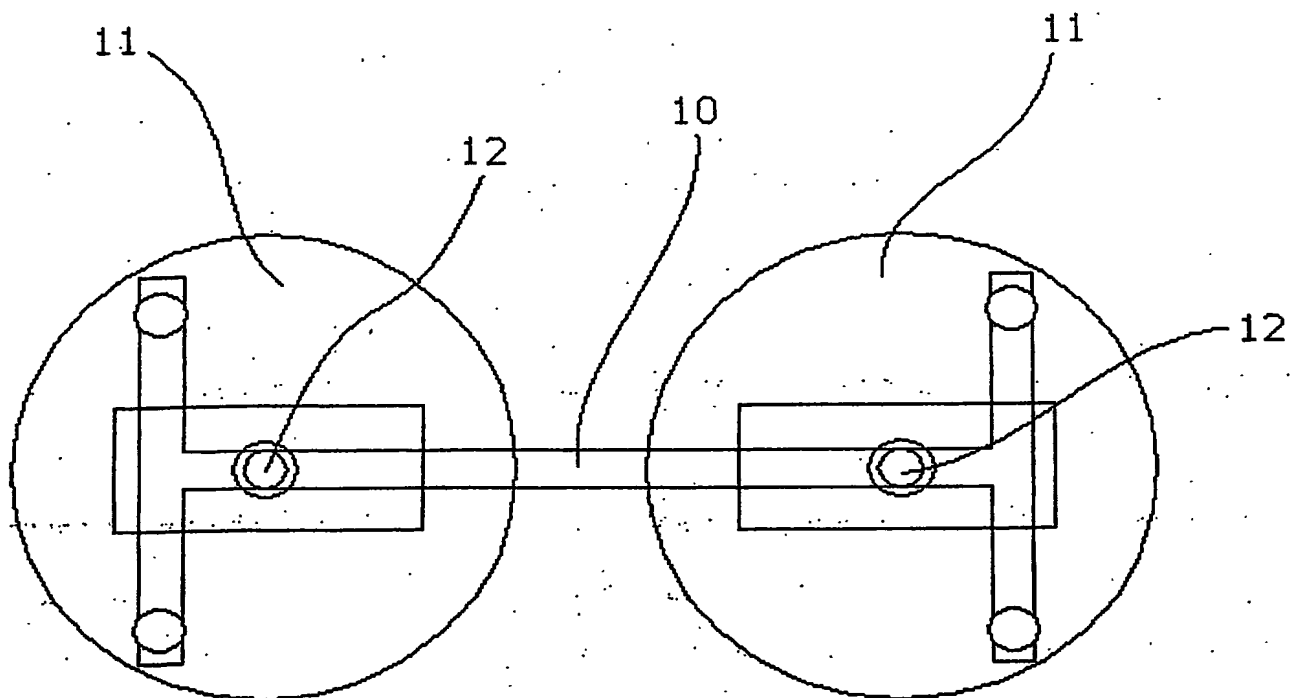


Fig. 1

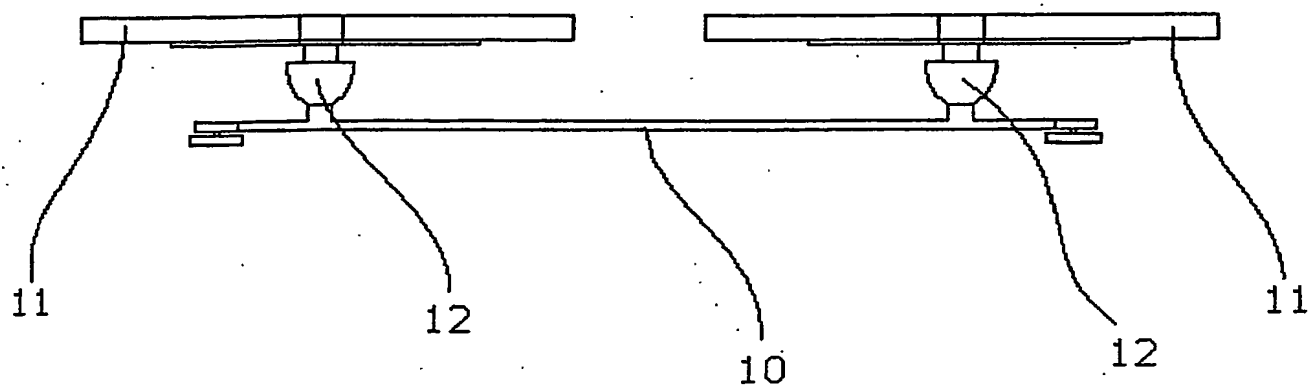


Fig. 2

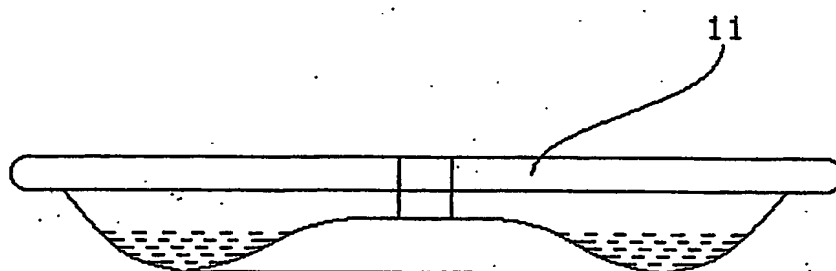


Fig. 3

INTERNATIONAL SEARCH REPORT

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IPC 7 A47C16/02 A63B23/04

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4 739 986 A (KUCCHARIK EDWARD J ET AL) 26 April 1988 (1988-04-26)	1,2,4-9, 12,13
Y	column 3, lines 1-10; claim 1; figures	3
Y	US 5 851 166 A (BERNARDSON PETER S) 22 December 1998 (1998-12-22)	3
	column 13, lines 24-40; figures 1,11-15	
X	US 6 042 521 A (DE GIORGIS FREDERICK CHARLES) 28 March 2000 (2000-03-28)	1,2,8,9, 12
	column 2, last line ; claim 1; figures	
X	FR 2 510 895 A (DANINOS CHRISTIAN) 11 February 1983 (1983-02-11)	1,4-13
	page 2, lines 8-12; claims 4,7,9; figures 3-8	
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INTERNATIONAL SEARCH REPORT

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	FR 2 674 140 A (LEBRETON ROGER) 25 September 1992 (1992-09-25) the whole document -----	1
A	GB 2 375 492 A (ANCHORS ANTHONY CLIFFORD) 20 November 2002 (2002-11-20) abstract; figure -----	
A	US 6 306 068 B1 (HEATWOLE RICHARD) 23 October 2001 (2001-10-23) abstract; figures -----	
A	US 4 186 920 A (FIORE RUSSELL D) 5 February 1980 (1980-02-05) abstract; figures -----	
A	US 1 769 199 A (ROSS BAXTER ARTHUR) 1 July 1930 (1930-07-01) the whole document -----	
A	WO 86/04250 A (HERMAN CHARLES) 31 July 1986 (1986-07-31) abstract; figures -----	
A	US 1 565 484 A (MCWHIRTER ROBERT B) 15 December 1925 (1925-12-15) the whole document -----	
A	PATENT ABSTRACTS OF JAPAN vol. 2000, no. 16, 8 May 2001 (2001-05-08) & JP 2001 012073 A (KATO MASAKATSU), 16 January 2001 (2001-01-16) abstract -----	

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP2004/000060

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4739986	A	26-04-1988	NONE	
US 5851166	A	22-12-1998	US 6217488 B1	17-04-2001
US 6042521	A	28-03-2000	GB 2347872 A , B NZ 329125 A AU 9049398 A AU 748158 B2	20-09-2000 29-03-1999 27-05-1999 30-05-2002
FR 2510895	A	11-02-1983	FR 2510895 A1	11-02-1983
FR 2674140	A	25-09-1992	FR 2674140 A1	25-09-1992
GB 2375492	A	20-11-2002	NONE	
US 6306068	B1	23-10-2001	AU 6136201 A CA 2408733 A1 CN 1427734 T EP 1280585 A1 JP 2003533303 T WO 0187425 A1	26-11-2001 22-11-2001 02-07-2003 05-02-2003 11-11-2003 22-11-2001
US 4186920	A	05-02-1980	NONE	
US 1769199	A	01-07-1930	NONE	
WO 8604250	A	31-07-1986	AU 5399486 A EP 0210253 A1 WO 8604250 A1	13-08-1986 04-02-1987 31-07-1986
US 1565484	A	15-12-1925	NONE	
JP 2001012073	A	16-01-2001	NONE	